**AMENDMENTS TO THE CLAIMS**

Claims 1-21 (cancelled)

22. (currently amended)     A method for estimating a flow rate of a fluid from a formation, comprising:

      pumping to remove the fluid from the formation;

      measuring fluid pressure during pumping;

      tracking a volume pumped during pumping;

      <u>estimating a fluid property comprising at least one of the set consisting of permeability, mobility and compressibility for the fluid from the flow rate;</u>

      <u>optimizing a fluid pumping rate based the property to acquire the fluid substantially in a single-phase</u>; and

      estimating the flow rate of the fluid from the measured pressure and volume.

23. (Previously Presented) The method of claim 22, wherein tracking volume comprises tracking a position of a pumping piston.

24. (canceled)

25. (canceled)

26. (Previously Presented) The method of claim 22, wherein the measuring the fluid pressure further comprises measuring pressure in a flow line for the fluid.

27. (currently amended)     The method of claim <u>22</u> ~~24~~ further comprising:

      detecting a pumping problem if the property is outside a predetermined limit.

28. (currently amended)     The method of claim <u>22</u> ~~24~~, further comprising estimating a quality of the fluid from the property over time.

29. (currently amended)     The method of claim <u>22</u> ~~24~~, further comprising:

determining a correlation coefficient for estimates of the property; and

detecting a pumping problem based on the correlation coefficient.

30. (currently amended) ~~The method of claim 22, further~~ A method for estimating a flow rate of a fluid from a formation, comprising:

pumping to remove the fluid from the formation;

measuring fluid pressure during pumping;

tracking a volume pumped during pumping;

estimating a fluid property comprising at least one of the set consisting of permeability, mobility and compressibility for the fluid from the flow rate;

estimating the flow rate of the fluid from the measured pressure and volume;

monitoring the fluid property versus time to determine ~~determining~~ formation cleanup.

31. (currently amended) ~~The method of claim 22, further~~ A method for estimating a flow rate of a fluid from a formation, comprising:

pumping to remove the fluid from the formation;

measuring fluid pressure during pumping;

tracking a volume pumped during pumping;

estimating the flow rate of the fluid from the measured pressure and volume; and

monitoring the flow rate versus time to determine whether a formation fluid sample is in a single phase state.

32. (currently amended)   A method for determining success of a pumping operation comprising:

estimating flow rate and pressure for a fluid pumped from a formation; and

estimating a correlation between the flow rate and pressure; and

estimating the success of the pumping operation based on the correlation, wherein success of the pumping operation further comprises a limited pressure drop in a sample acquired.

33. (Previously Presented) The method of claim 32 further comprising:

    maximizing a pumping rate based on the correlation, to acquire the fluid in a single-phase.

34. (canceled)

35. (currently amended) An apparatus for retrieving fluid comprising:

    a pump whose volume can be tracked that retrieves the fluid from a formation;

    a pressure gauge that measures pressure of the fluid; and

    a processor programmed to track success of retrieving the fluid from volume and pressure, wherein the processor is programmed to estimate a fluid property selected from a group consisting of permeability, mobility and compressibility, wherein the pump removes the fluid at a rate based on the property to acquire the fluid substantially in a single-phase.

36. (Previously Presented) The apparatus of claim 35, where processor changes speed of pumping to optimize retrieval.

37. (Previously Presented) The apparatus of claim 35, further comprising:

    a tank for holding the fluid.

38. (canceled)

39. (canceled)

40. (currently amended)   The apparatus of claim 35 38 wherein the processor is programmed to provide an indicator to maximize the pumping rate based on the property, to acquire the fluid in a single-phase.

41. (Previously Presented) The apparatus of claim 35, wherein the pump removes

the fluid from the formation and pumps the fluid into a sample chamber through a flow line.

42. (currently amended)    The apparatus of claim 35 38, wherein the pressure gauge measures fluid pressure in the flow line.

43. (currently amended)    The apparatus of claim 35 38, wherein the processor detects a pumping problem if the property is outside a predetermined limit.

44. (currently amended) The apparatus of claim 38, An apparatus for retrieving fluid comprising:

      a pump whose volume can be tracked that retrieves the fluid from a formation;

      a pressure gauge that measures pressure of the fluid; and

      a processor programmed to track success of retrieving the fluid from volume and pressure, wherein the processor is programmed to estimate a fluid property selected from a group consisting of permeability, mobility and compressibility, wherein the processor is further programmed to one of: (i) estimate estimates a quality of the fluid from the property measured over time, (ii) estimate a correlation coefficient for estimates of the property and detect a pumping problem based on the correlation coefficient, (iii) monitor the property versus time to determine formation cleanup, and (iv) monitor the property versus time and estimate whether the fluid sample is in a single phase state.

45. (canceled)

46. (canceled)

47. (canceled)

48. (currently amended)   A system for estimating a property of a fluid, comprising:

    a downhole tool;

    a pump in the downhole tool that removes the fluid from a formation, wherein the pump removes the fluid at a rate based on the property to acquire the fluid substantially in a single-phase;

    a pump position indicator;

    a pressure gauge that measures fluid pressure corresponding to a pump piston position indicated by the pump position indicator; and

    a processor that estimates the property of the fluid from the measured pressure and pump position.

49. (Previously Presented) The downhole tool of claim 48, wherein the property is selected from a group consisting of permeability, mobility and compressibility.

50. (canceled)      .

51. (Previously Presented) The downhole tool of claim 48 wherein the processor provides an indicator to maximize the pumping rate based on the property, to acquire the fluid in a single-phase.

52. (Previously Presented) The downhole tool of claim 48, wherein the pump removes the fluid from the formation and pumps the fluid into a sample chamber through a flow line.

53. (Previously Presented) The downhole tool of claim 52, wherein the pressure gauge measures fluid pressure in the flow line.

54. (Previously Presented) The downhole tool of claim 48, wherein the processor detects a pumping problem if the property is outside a predetermined limit.

55. (Previously Presented) The downhole tool of claim 48, wherein the processor is programmed to estimate a quality of the fluid from the property measured over time.

56. (Previously Presented) The downhole tool of claim 48, wherein the processor is programmed to estimate a correlation coefficient for estimates of the property and detect a pumping problem based on the correlation coefficient.

57. (Previously Presented) The downhole tool of claim 48, wherein the processor is programmed to monitor the property versus time to estimate formation cleanup.

58. (Previously Presented) The downhole tool of claim 48, wherein the processor monitors the property versus time to estimate whether the fluid is in a single phase state.